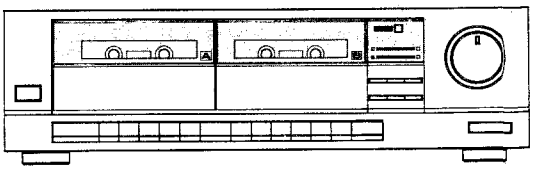
OPERATING INSTRUCTIONS
MANUEL D'INSTALLATION ET D'UTILISATION
BEDIENUNG SANLEITUNG
INSTRUCCIONES DE FUNCIONAMIENTO



DD-1130

Stereo Double Cassette Deck
Magnetocassétte stereo à deux platines
Doppel-Stereo Cassettendeck
Doble Platina Estereofonica Para Casettes

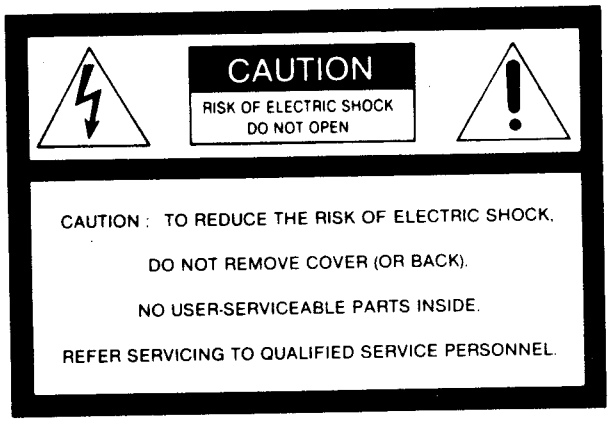
Sherwood

Live Performance Sound™

Unpacking and Installation

Congratulations on Your Purchase!

Your new high fidelity Tape Deck is designed to deliver maximum enjoyment and years of trouble free service. Please take a few moments to read this manual thoroughly. It will explain the features and operation of your Tape Deck and help insure a trouble free installation.
Please unpack your Tape Deck carefully. We recommend that you save the carton and packing material. They will be helpful should you ever need to move your unit and may be required if you ever need to return it for service. Your Tape Deck is designed to be placed in a horizontal position and it is important to allow at least two inches of space behind your unit for adequate ventilation and cabling convenience. To avoid early damage, never place the unit near radiators, in front of heating vents, in direct sun light, or in excessively humid or dusty location.
Connect your complementary components as illustrated in the following section.


CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN
CAUTION : TO REDUCE THE RISK OF ELECTRIC SHOCK,
DO NOT REMOVE COVER (OR BACK).
NO USER-SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.

This symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

Caution: To prevent electric shock do not use this (polarized) plug with an extension cord, receptacle or other outlet unless the blades can be fully inserted to prevent blade exposure.

Attention: Pour prévenir les chocs électriques ne pas utiliser cette fiche polarisée avec un prolongateur, une prise de courant ou une autre sortie de courant, sauf si les lames peuvent être insérées à fond sans en laisser aucune partie à découvert.

SYSTEM HOOK UP BLOCK DIAGRAM

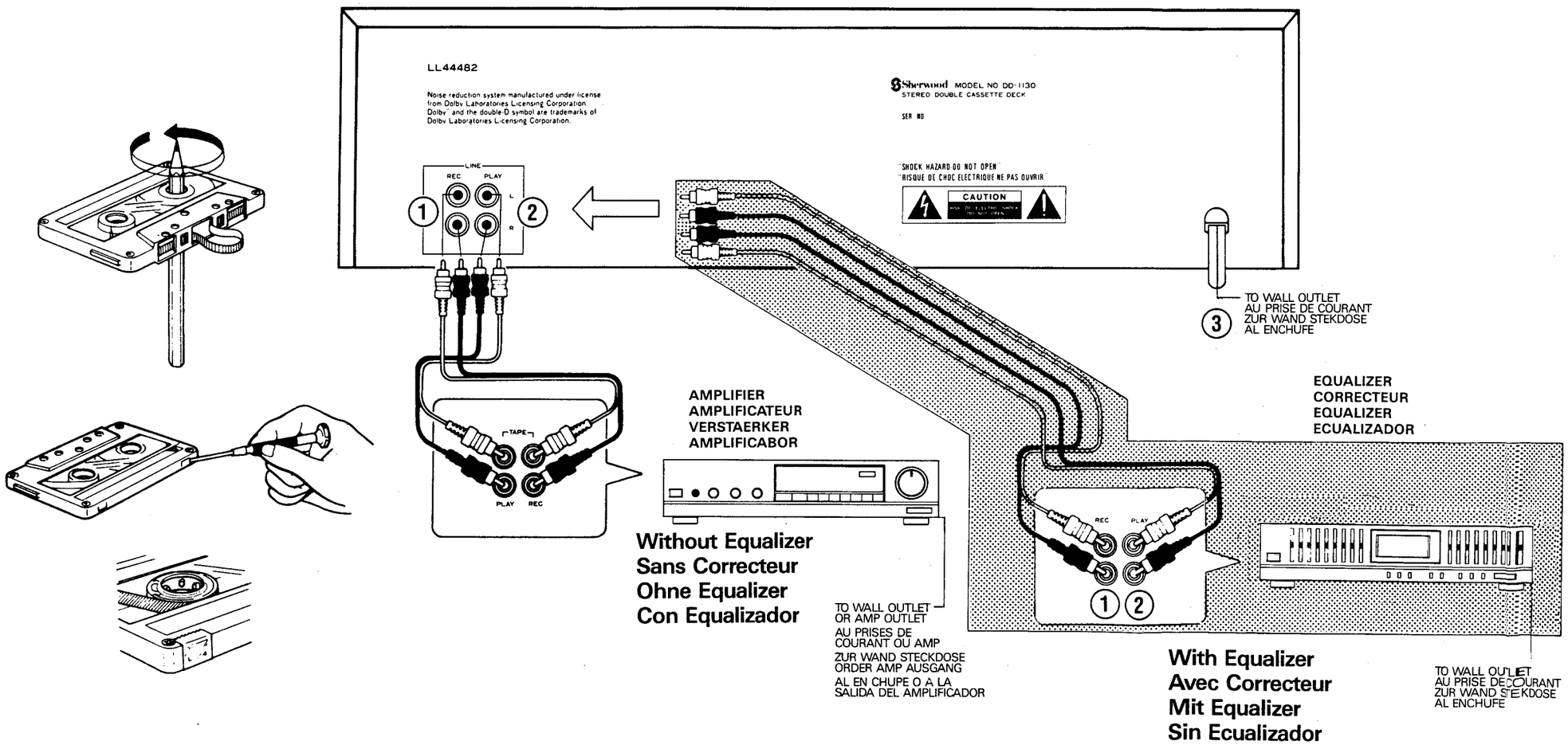
1. PATCH CORD COLOR: { RED: RIGHT CHANNEL
   WHITE: LEFT CHANNEL

2. DO AS SHOWN BELOW:

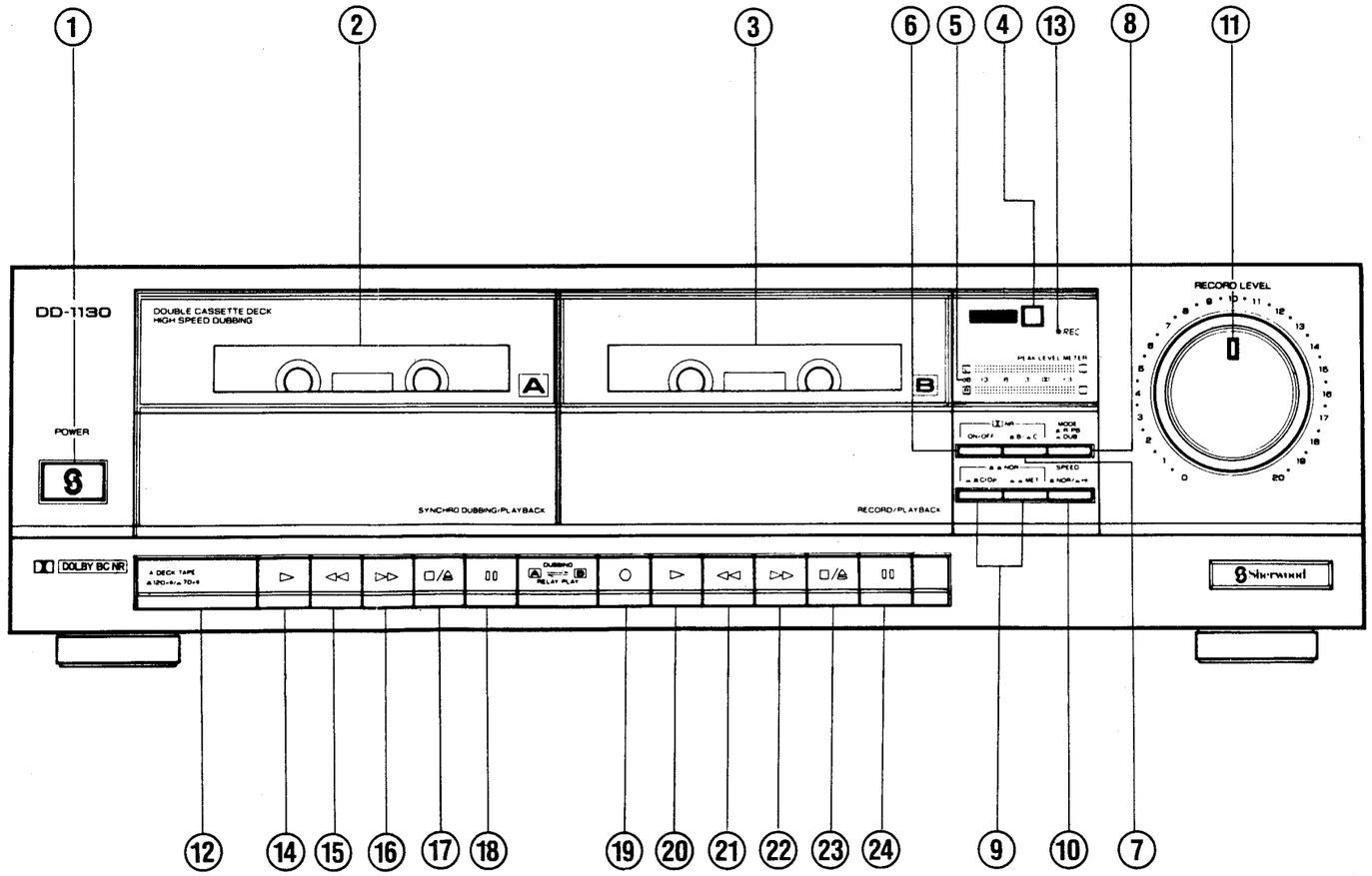
STEP	FROM		TO	
1	TURNTABLE	OUTPUT+GND	→ AMPLIFIER	PHONO INPUT+GND
2	C D PLAYER	OUTPUT	→ AMPLIFIER	CD INPUT
3	TUNER	OUTPUT	→ AMPLIFIER	TUNER INPUT
4	STEREO VCR	OUTPUT	→ AMPLIFIER	VIDEO INPUT
5	SPEAKER	L/R { RED / BLACK	→ AMPLIFIER	SPEAKER L/R
6	CASS. DECK	LINE PLAY	→ AMPLIFIER	TAPE PLAY
	CASS. DECK	LINE REC	→ AMPLIFIER	TAPE REC
7	CASS. DECK	LINE PLAY	→ EQUALIZER	TAPE PLAY
	CASS. DECK	LINE REC	→ EQUALIZER	TAPE REC
	AMPLIFIER	TAPE REC	→ EQUALIZER	LINE IN
	AMPLIFIER	TAPE PLAY	→ EQUALIZER	LINE OUT

WITH EQUALIZER:STEP 1 THROUGH 7 (EXCEPT 6)
WITHOUT EQUALIZER:STEP 1 THROUGH 6

Rear Panel Connections
Prises de l'Arrière
Anschlüsse In Der Rückwand
Conexiones En El Panel Posterior



Front Panel Controls
Commandes de l'Avant
Steuerungeu in der Vorderwand
Mandos de Control del Panel Frontal



Rear Panel Connections

1. LINE REC JACKS

Connect the audio cords between the LINE REC of this unit and the TAPE OUT or TAPE REC terminal of your Amplifier or Receiver. It may be selected as a recording source.
NOTE: Make sure that the white lead (left) and red (right) are correctly connected.

2. LINE PLAY JACKS

To play tapes, connect the cords between the LINE PLAY of this cassette deck and the TAPE IN or TAPE PB terminal of your Amplifier or Receiver.

3. AC INPUT CORD

Plug cord into AC outlet on the rear panel of your AMP or Receiver.

Front Panel Controls

1. POWER SWITCH (FUNCTION)

To turn the power on, depress the POWER switch and depress it again to turn off for the separate operation. In system operation, plug the AC cord into the switched AC outlet of the AMP or Receiver.

2. DECK A: CASSETTE DOOR

This oil damped soft eject cassette door glides open smoothly. This door can be easily dismounted by pushing it up and then taking it out toward the front after opening the door. This gives easy access to the heads and transport parts for cleaning and demagnetizing. Depress the eject button of the Deck A to open the cassette door when Deck A is in the stop mode. Deck A plays tapes but will not record.

3. DECK B: CASSETTE DOOR

Depress the eject button of Deck B to open the cassette door when Deck B is in the stop mode. Deck B plays and records cassette tapes.

4. DECK B: TAPE COUNTER/RESET BUTTON

Set the tape counter to "000" at the beginning of the recording, so that you can make a note of the digital setting at the start of each programme to provide the convenient tape index. This tape counter functions for Deck B only. Push RESET button to reset the tape counter to "000".

5. PEAK LEVEL DISPLAY

This LED peak level display (5 LEDs/CH) indicates the recording or output (playback) level. This is useful in recording level adjustment. See RECORDING with Deck B section for details.

6. DOLBY* NR ON-OFF SWITCH

Depress this switch in ON position when recording with Dolby NR (Noise Reduction) system, or when playing back recordings which have been made using DOLBY NR. See the next section for further step.

* Noise reduction system manufactured under licence from Dolby Laboratories Licensing Corporation, "Dolby" and the double-D symbol are trade marks of Dolby Laboratories Licensing Corporation.

7. DOLBY B-C NR SELECTOR

The current Dolby NR system is B-type, then Dolby Laboratories introduced new Dolby C-type NR in 1980 which gives much better noise reduction plus improving high range frequency response, so suggest to utilize Dolby C-type NR when you make new recording with this cassette deck.
Leave this selector in its "B" position when recording or playback in Dolby B-type NR mode and depress it in its "C" position in Dolby C-type NR mode.

Principle of DOLBY NR System

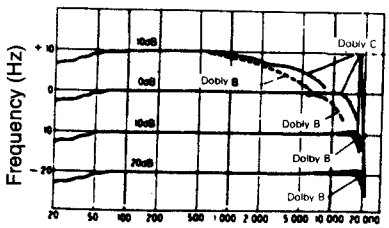
The Dolby NR system functions so that it automatically increases recording levels of medium and high frequencies when the recording signal level is lower than the specified level (encoding), and automatically reduces the output levels to the normal level during playback (decording). In this way, the tape hissing noise is remarkably reduced without affecting the sound quality. The Dolby NR system used in your Tape Deck improves S/N ratio by about 5 dB at 1 KHz and about 10 dB at 10 KHz in B-type and by about 20 dB on the most frequency range in C-type. Further more C-type has the anti-saturation network which reduces the affects of high frequency saturation, improving high range frequency response.

Because Dolby C Noise Reduction gives substantially better results than no noise reduction or Dolby B NR we suggest it be used for all tapes which will be played back on your cassette deck. Recordings made for auto or portable play back may sound better with or without Dolby NR, Experiment.

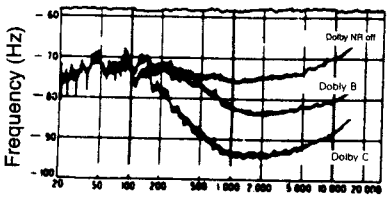
NOTE:

1. Most commercially available pre-recorded tapes with "DD" mark are recorded with Dolby B NR or recorded with Dolby C NR will have "DD C NR" mark.
2. Set this selector to the same position in both recording and playback modes.

Characteristics of Dolby B-C type



Noise Reduction Effects



8. DECK MODE SWITCH

In pushed-out position (REC/PB mode), the decks will operate as the normal cassette deck such as a playback deck for Deck A or a recording/playback deck for Deck B and also it allows the relay playback from Deck B to Deck A. In pushed-in position (DUB mode), the decks are ready for synchro dubbing from Deck A to Deck B and also it releases that the DUB SPEED switch is operative.

9. DECK B: TAPE SELECTOR

Combination switches for selecting both EQ and BIAS together according to the type of the tape to be recorded or played: NORMAL, CrO_2 or METAL. Normal gives 120μ Sec. EQ CrO_2 and Metal give 70μ Sec. Refer to the list on page 20 for the recommended position for each commercially available cassette tape.

10. DUBBING SPEED SELECTOR

This selector permits a change in tape speed for dubbing: NORMAL or HIGH speed. In HIGH MOD the speed almost one and a half times, however better sound quality can be expected in the NORMAL position. During dubbing, don't change speed. It may cause tape click noise recorded.

11. RECORD LEVEL CONTROL

This control adjust the recording level in recording mode of Deck B. In DUBBING Mode, this control will not function and the signals to be dubbed from Deck A to Deck B are directly recorded on Deck B.

12. DECK A: EQ SELECTOR (120μS or 70μS)

This selector is used to select proper equalizing circuit when playing with Deck A in accordance with the type of tape being used. Refer to the list on the page 20 for the recommended position for each commercially available cassette tape.

13. RECORD INDICATOR

This indicator will light when RECORD button is depressed, indicating that the Deck B is in recording mode.

14. DECK A: PLAY (▶) BUTTON

The tape starts running for playback as this button is depressed. Playing stops automatically when the tape reaches the end.

15. DECK A: REWIND (◀◀) BUTTON

Depressing this button sends the tape fan to the left hand reel.
Depress the ST/EJ button when the tape reaches the end.

16. DECK A: FAST FORWARD (▶▶) BUTTON

Depressing this button sends the tape fast to the right hand reel.
Depress the ST/EJ button when the tape reaches the end.

17. DECK A: STOP/EJECT BUTTON

As you depress this button, all other operation buttons of Deck A are released and the tape motion stops. Pressing this button again opens the door for removal of the cassette.

18. DECK A: PAUSE (❙❙) BUTTON

To momentarily pause during playback, depress this button. To starts playing, depress PAUSE button again. This button is also used for synchro dubbing from Deck A to Deck B or for relay playback from Deck B to Deck A. See OPERATIONS page for details.

19. DECK B: RECORD BUTTON

When this button is depressed recording starts immediately as ONE TOUCH OPERATION. In this case, the PLAY button will be automatically depressed also.

20. DECK B: PLAY (▶) BUTTON

The tape starts running for playback as this button is depressed. Playing stops automatically when the tape reaches the end.

21. DECK B: REWIND (◀◀) BUTTON

Depressing this button sends the tape fast to the left hand reel, depress the ST/EJ button when the tape reaches the end.

22. DECK B: FAST FORWARD (▶▶) BUTTON

Depressing this button sends the tape fast to the right hand reel, depress the ST/EJ button when the tape reaches the end.

23. DECK B: STOP/ EJECT BUTTON

As you press this button, all other operation buttons of Deck B are released and the tape motion stops. Pressing this button again opens the door for removal of the cassette.

24. DECK B: PAUSE (❙❙) BUTTON

To momentarily pause during dubbing, recording or playback, depress this button. To start, depress it again. Also use this button for standby recording. Depress the PAUSE button first and then RECORD button simultaneously. When you are ready for recording after adjusting RECORD LEVEL controls, etc. depress PAUSE button again, the recording will start immediately. It can be also useful to skip the music selection in normal speed dubbing mode.

Playback with either Deck A or Deck B

1. Turn the power on.
2. Depress the STOP/EJECT button on Deck A or Deck B.
3. Insert a pre-recorded cassette into the cassette holder with the tape side to be played facing in front and set it in place.
4. Set the Deck A EQ (120μS or 70μS) when Deck A is used or the Deck B TAPE selector (NORM, CrO_2 or METAL) for Deck B to appropriate position according to the type of tape to be played.
5. To play the tape recorded with Dolby NR, depress the DOLNY NR switch in and select the type DOLBY NR; B or C.
6. Depress the PLAY button. The tape will now start playing. Adjust the volume, tone, etc. on your amplifier to suit to your listening preference.
7. To stop playing momentarily, depress the PAUSE button. To start playing, depress the PAUSE button again.
8. To stop playing completely, depress the STOP/EJECT button and depress it again to open the door for removal of the cassette. When the tape reaches the end, playing stops automatically.

NOTE:

- When the PLAY buttons of the Deck A and Deck B are both depressed at the same time, Deck B is only in playback mode.
- If a CrO_2 or METAL cassette recorded by another cassette deck is played on this deck and high frequency response is poor, set the Deck A EQ or Deck B TAPE selector to NORM position for playback.

Relay Playback from Deck B to Deck A

1. Turn the power on.
2. Depress both STOP/EJECT buttons.
3. Insert a pre-recorded tape into each cassette holder with the tape side to be played facing in front and set them in place.
4. Set the Deck A EQ and Deck B TAPE selector to appropriate position according to the type of each tape to be played (NORM, CrO_2 or METAL).
5. To play the tape recorded with Dolby NR, depress the DOLBY NR switch in and select the type of DOLBY NR; B or C.
6. Depress the PLAY button of Deck B first, then the Deck B starts playing.
7. During playback on Deck B, depress the PAUSE button on Deck A.
8. And depress the PLAY button of Deck A in sequence, then Deck A is in the standby playback mode.
9. When the tape on Deck B reaches the end, Deck B will stop automatically and Deck A will start playing.

NOTE:

- Relay playback from Deck A to Deck B will not function.

Recording with Deck B

1. Turn the power on.
2. Set the function selector on the amplifier to the program source you wish to record; PHONO, TUNER, COMPACT DISC, etc.
3. Set the MODE switch to REC/PB position.
4. With the tape side to be recorded facing in front, insert the cassette into the cassette holder on Deck B and set it in place.
   Check to make sure that the cassette erasure tab on the upper edge has not been removed.
5. Set the Deck B TAPE selector to appropriate position according to the type of tape to be recorded. Refer to the list on page 20.
6. To make a recording in Dolby NR mode, depress the Dolby NR switch in and select the type of Dolby NR; B or C.
7. To control the start for adjustment, depress the PAUSE button on Deck B first.
8. Depress the RECORD button on Deck B, then the "REC" indicator will light up indicating that the Deck B is in recording mode as the standby state.
9. Adjust the recording level with the REC LEVEL control so that the LED PEAK LEVEL display indicates about 0 dB at the peak reading of program selected. Refer to the RECORDING LEVEL ADJUSTMENT section for details.
10. When you are ready for recording, depress the PAUSE button on Deck B again, then recording will start immediately.

NOTE: If immediate recording is required rather than standby recording, depress the RECORD button on Deck B directly.

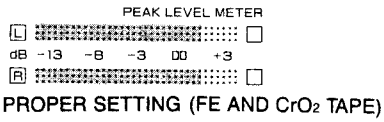
11. When the recording is finished, depress the STOP/EJECT button once.
    When the tape reaches the end while recording, Deck B will stop automatically.

NOTE:

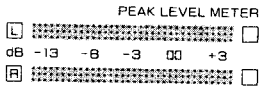
- If the cassette erasure tab on the upper edge has been removed, recording will not function.
- You can monitor the recording for quality check by speakers on your amplifier depressing the TAPE monitor switch.
- To erase a tape without adding new recording, turn the REC LEVEL control to zero, set the Deck B TAPE selector to METAL position (highest bias position) and depress the RECORD button.
- To review the just recorded selection, utilize the tape counter. Reset the counter to "000" at the start of every recording and rewind to "000" after recording for review.

RECORDING LEVEL ADJUSTMENT

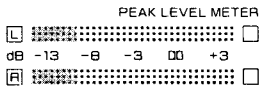
High recording level is recommended to reduce tape noise, but overloaded and distorted tape result if the level is too high. Generally, recording levels should be adjusted so that the level meters indicate as fully as possible to the proper level shown at below for NORMAL and CrO_2 tape except METAL tape. The METAL tape permits recording level up to +3 dB higher position on the level meter.



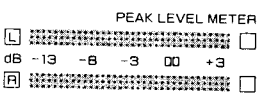
PROPER SETTING (FE AND CrO_2 TAPE)



TOO HIGH SETTING (FE AND CrO_2 TAPE)



TOO LOW SETTING (FE AND CrO_2 TAPE)



PROPER SETTING (METAL TAPE)

Synchro Dubbing from Deck A to Deck B

1. Turn the power on.
2. Load a pre-recorded cassette into the cassette holder on Deck A.
3. Set the Deck A EQ selector to appropriate position according to the type of tape to be played.
4. Load a blank cassette (or pre-recorded cassette to replace with new recording) into the cassette holder on Deck B. Check to make sure that the cassette erasure tab on the upper edge has not been removed.
5. Set the Deck B TAPE selector to appropriate position according to the type of tape to be recorded.
6. Set the MODE switch to the DUB position.
7. Set the DUBBING SPEED selector to a desired position; NORMAL or HIGH speed.
8. Depress the PAUSE button of Deck A first.
9. Depress the PLAY button of Deck A second, then Deck A is in the standby playback mode.
10. Depress the RECORD button of Deck B third, then the PAUSE button of Deck A is automatically released and synchro dubbing starts.
11. To skip any selection of Deck A, depress the PAUSE button of Deck B during dubbing and depressing it again when you are ready for dubbing the next selection.
12. To stop dubbing, depress the STOP/EJECT buttons of both Decks simultaneously.

NOTE:

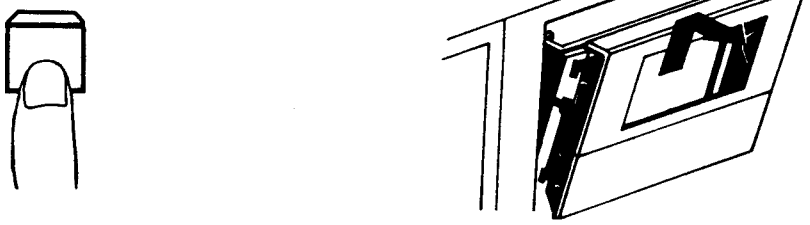
- In dubbing mode, the Dolby NR circuits are automatically bypassed for copying a tape, but operative for the monitoring output.
  If the original tape is recorded without Dolby NR, it makes a copy recorded without Dolby NR. In this case, set the Dolby NR switch to OFF for monitoring purpose.
  If the original tape is recorded with Dolby NR, it makes a copy recorded with Dolby NR. In this case, set the Dolby NR switch to ON for monitoring purpose.
- In dubbing mode, it makes a copy as the same level as that of original tape automatically, but sometimes it may make a copy with a little higher or lower level because of different recording level between brand names of tape.
- Even HIGH speed dubbing makes a copy one and a half times faster than NORMAL speed, we recommend to dub at NORMAL speed if better sound quality is required.
- During dubbing please don't change speed. It may cause tape click noise recorded.

Maintenance

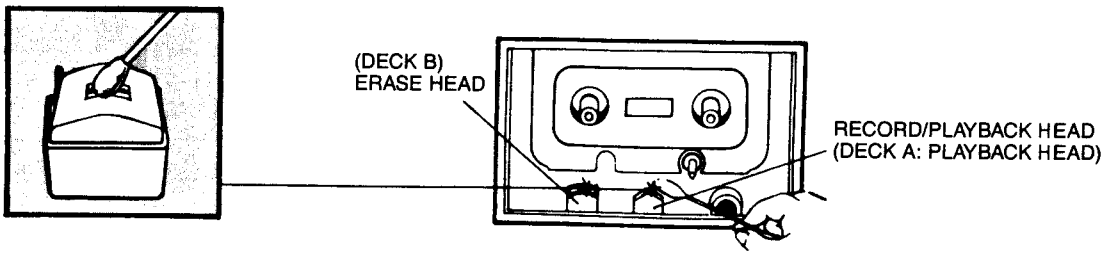
CLEANING OF HEADS AND TAPE PATH

Generally, cleaning after every 10 hours of operation will be sufficient. However, all surfaces over which tape travels should be cleaned before making high quality recordings.

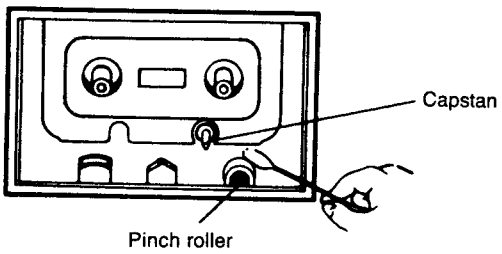
1. Set the POWER switch to OFF and remove cassette door lid by pushing it up and then taking it out toward the front side after opening the door.



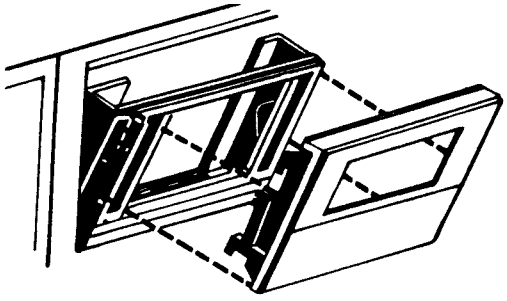
2. Wipe the heads using a cleaning tip slightly moistened with commercially available head cleaner.



3. Set the POWER switch to ON and depress the PLAY button. Wipe the capstan and pinch roller using another cleaning tip slightly moistened with the commercially available rubber cleaner. When the cleaning is finished, depress the STOP button.

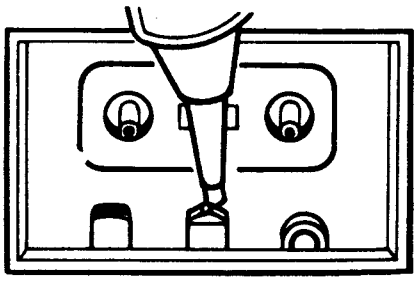


4. Replace the door lid.
   Do not insert a cassette until the cleaner has completely dried.



DEMAGNETIZING HEADS

Residual magnetism will gradually build up on the heads through continuous use and cause erasure of high frequencies and hiss. The heads and metallic parts of the tape path should be demagnetized after 20-30 hours of operation with a commercially available head demagnetizer. Be sure the cassette deck is turned off.



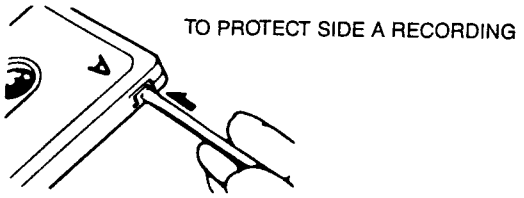
CLEANING CABINET

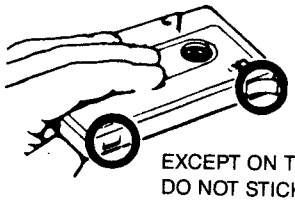
Clean the cabinet, panel and controls with a soft cloth lightly moistened with mild soap solution. Do not use any type of scouring powder or solvent such as alcohol or benzine.

Note on Cassettes

TO PROTECT RECORDING FROM ACCIDENTAL ERASURE

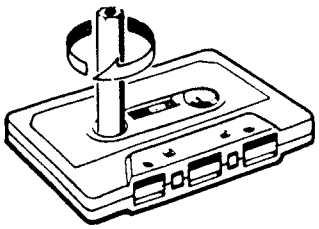
Remove the tab as illustrated so that the REC button cannot be depressed. To record on a cassette after tabs have been removed, simply cover the slot with cellophane or vinyl tape.

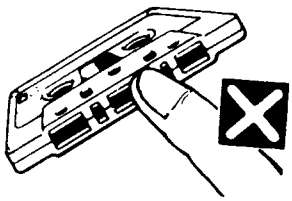




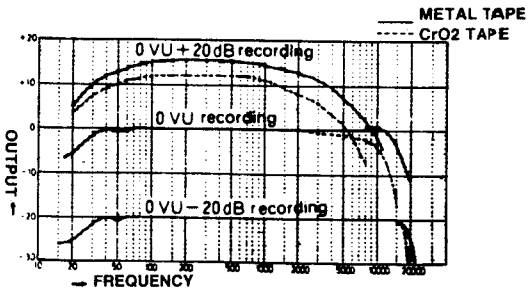
CASSETTE CARE

- From a tape length point of view, most of the tape manufacturers use C-60's (30 min×2) as their standard, some C-90's (45 min×2) and C-120's (60 min×2) less often. If the length of the tape is longer it can stretch and become soft. We would like to recommend that you use C-60 or C-90 tapes for better quality sound and safe tape operation. C-120 cassette tape is so thin and soft that, if the capstan or pinch roller is even slightly dirty, it often coils around the capstan or pinch roller and results in tape breakage, so if you use C-120 tape, perfectly clean capstan and pinch roller.
- Before inserting a cassette, take up the slack of the tape to prevent it from becoming entangled around the capstan.
- Avoid touching the tape surface of a cassette. Protect it from dust by storage in a case. Even minor dirt of dust could cause contamination of the heads resulting in noise and sound drop-out.





- Keep cassettes away from magnetic equipment such as speakers, amplifier, etc. as erasure or distortion of your recorded tape could occur.
- Do not expose a cassette to direct sunlight, extreme cold temperature or moisture.
- Avoid rewinding or winding in fast forward mode just before storing a cassette tape as this may cause stretching of the tape edge if it is left over a period of time.
- Do not stick any thick paper or tape on the cassette, as this may effect tape contact with the head.
- METAL Tape is the latest development in cassette technology, an advance that allows the cassette deck to complete on equal audio terms with the new generation of amplifiers, tuners and turntables. Comparing with CHROME tape, METAL tape has better signal to noise ratio, wider frequency response and higher MOL (maximum output level).



TAPE EQ SELECTOR & TAPE SELECTOR RECOMMENDATION

This unit is furnished with the equalization selector for Deck A and with a tape selector for Deck B. According to the deck to be used, the designated selector should be set to the proper position before commencing playback or recording to match the bias and equalization circuits to the cassette tape being used.

1. DECK A: EQUALIZATION SELECTOR (120μS or 70μS)

- When using normal tape, set the selector to the 120μS position (out position).
- When using CrO_2, FeCr or Metal tape, set the selector to the 70μS position (in position).

NOTE:
Most high quality tapes will have the appropriate EQ setting (70μS or 120μS) printed directly on the cassette tape.
120μS: Normal Tape
70μS: CrO_2, FeCr and Metal

2. DECK B: TAPE SELECTOR

The tape selector should be set in the proper position, before starting recording or playback on Deck B, in order to match the bias and equalization circuits with type of cassette tape being used.

NOTE:
- Use the table below to find the proper position. For tapes not listed in this table, check the tape manufacture's instructions.
- *Mark: Recommended design reference tape.

Brand	Type of Tape	Position of the Equalization Selector and Tape Selector	
		TAPE A	TAPE B
		Equalization Selector	Tape Selector
SHARP	C-60S/C-90S	NORM	normal
	C-60SD/C-90SD	NORM	normal
	C-60CR/C-90CR	CR/MTL	CrO_2
	C-46MX/C-60MX/C-90MX	CR/MTL	metal
MAXELL	LN C60/C90	NORM	normal
	UD C60/C90	NORM	normal
	UD XLI C60/C90*	NORM	normal
	XLI-S60/S90*	NORM	normal
	UDXLII C60/C90*	CR/MTL	CrO_2
	XLII-S60/S90*	CR/MTL	CrO_2
	MX 60/90	CR/MTL	metal
TDK	D-C60/C90	NORM	normal
	AD 60/90*	NORM	normal
	SA-C60/C90*	NORM	CrO_2
	MA-C60/C90*	CR/MTL	metal
	MA-R C60/C90*	CR/MTL	metal
SONY	LNX 60/90	NORM	normal
	HFX 60/90	NORM	normal
	SHF 60/90*	NORM	normal
	FECR 60/90	CR/MTL	normal
	CD-α60/90*	CR/MTL	CrO_2
	METALLIC 60/90*	CR/MTL	metal

Brand	Type of Tape	Position of the Equalization Selector and Tape Selector	
		TAPE A	TAPE B
		Equalization Selector	Tape Selector
FUJI FILM	FL C-60/C-90	NORM	normal
	FX-I C-60/C-90*	NORM	normal
	FX-II C-60/C-90*	CR/MTL	CrO_2
	METAL C-60/C-90*	CR/MTL	metal
SCOTCH	MASTER I C-60/C-90*	NORM	normal
	MASTER II C-60/C-90*	CR/MTL	CrO_2
	MASTER III C-60/C-90	CR/MTL	normal
	METAFINE C-60/C-90*	CR/MTL	metal
MEMOREX	MRX3 OXIDE C-60/C-90	NORM	normal
	HIGH BIAS C-60/C-90*	CR/MTL	CrO_2
AMPEX	GRAND MASTER I C-60/C-90	NORM	normal
	GRAND MASTER II C-60/C-980	CR/MTL	CrO_2
	LH 60/90	NORM	normal
BASF	FSLH I 60/90	NORM	normal
	CrO_2 SUPPER II 60/90	CR/MTL	CrO_2
	FECR III 60/90	CR/MTL	normal
	METAL IV 60/90*	CR/MTL	metal

Troubleshooting Guide

Re-read the operating instruction carefully to be sure the unit is being operated properly. You will usually find a quick solution to most problems mentioned in the following chart.

PROBLEM	POSSIBLE CAUSE	CORRECTIVE ACTION
No power turn on.	• AC cord accidentally disconnected.	• Check AC cord is plugged into AC outlet properly.
No tape movement.	• PAUSE button is depressed.	• Depress PAUSE button again.
No playback.	• Tape is jammed.	• Replace the cassette.
	• Unit is not connected properly to amplifier.	• Check cables between deck and amplifier.
	• Amplifier is not set properly.	• Depress corresponding Tape MONITOR switch.
Distorted sound	• Tape heads are dirty.	• Clean the heads.
	• Cassette tape is badly stretched.	• Replace the cassette.
Tape speed is erratic.	• Capstan or pinch rollers are dirty.	• Clean the capstan and pinch rollers.
Audible Hum.	• Audio cables are not connected.	• Check plugs on both deck and amplifier.
	• Pick up AC magnetic field.	• Increase distance between deck and other components or equipments.
No recording or dubbing	• Erasure tabs on the cassette have been removed	• Cover the openings with adhesive tape.
	• Line REC LEVEL control is at the minimum.	• Increase REC LEVEL control.

Specifications

Type	Soft touch front loading stereo double cassette deck with Dolby B/C NR system.	
Track system	4 track, 2 channel stereo playback (Deck A) and recording/playback (Deck B)	
Recording system	AC bias system (bias frequency: 105 KHz)	
Erasing system	AC system	
Tape speed	1-7/8 ips (4.76 cm/sec.)	
Heads	Hard permalloy recording/playback head×1 Hard permalloy playback head×1 Double gap erasing head×1	
Motor	Electronic governor controlled DC motor	
Wow and flutter	Less than 0.12% (WRMS)	
Fast winding time	Approximately 120 seconds with C-60 cassette tape	
Frequency Response		
−20 dB REC	Normal tape	35-14,500 Hz (40-13,500 Hz +1, −3 dB)
	CrO_2 tape	35-15,000 Hz (40-14,000 Hz +1, −3 dB)
	METAL tape	35-16,000 Hz (40-14,500 Hz +1, −3 dB)
0 dB REC/PB	METAL tape	40-12,000 Hz ±3 dB
Signal to noise ratio (REC/PB)	Dolby NR C (Weighted)	72 dB (Normal tape) 74 dB (CrO_2 tape) 74 dB (Metal tape)
	Dolby NR B (Weighted)	62 dB (Normal tape) 64 dB (CrO_2 tape) 64 dB (Metal tape)
	Dolby NR OFF (Weighted)	53 dB (Normal tape) 55 dB (CrO_2 tape) 55 dB (Metal tape)
Third harmonic distortion	Less than 1.0% at 1 KHz, 0 dB REC/PB	
Input sensitivity/Impedance	LINE 70mV/47K ohms	
Output level/Impedance	LINE 500mV/1.5K ohms	
Built-in features	Dolby NR B/C system. Relay playback, Synchronous dubbing High speed dubbing selector LED peak level display (5 LEDs×2) 2-push in type tape selector (NORM, CrO_2, METAL) for B Deck, EQ selector for A deck	
Power consumption	12 Watts	
Dimensions	440(W)×118(H)×225(D)mm 17.3(W)×4.6(H)×8.9(D) inches	
Weight	4.1 kg	

NOTE: Specifications and the design subject to change without notice for improvements.